ANALYSIS OF ONLINE PURCHASING BEHAVIOR AND ONLINE SUPERMARKET USAGE AMONG YOUNG ADULTS

Takune SAKAUE[1]
Nobutaka SUZUKI[2]

Abstract
The purpose of this study is to analyze the online purchasing behavior of young adults (ages 20-29), focusing specifically on the use of online supermarkets. Overseas, online supermarkets are used by a wide range of generations, including young adults, and have a large market size. In Japan, the market size is smaller compared to overseas and the usage rate among young adults is particularly low. This study conducted quantitative research using questionnaires targeting Japanese university students. The analysis revealed that online supermarket usage among young Japanese adults is low and their use could be limited to a supplementary role in contrast to physical stores. The reasons could be that physical stores are often more accessible nearby in Japan compared to overseas and young Japanese adults perceive online supermarkets as more expensive, indicating they have psychological barriers against using them.

Keywords: Young Adults, Consumer Behavior, Online Purchasing, Online Supermarket, Questionnaire Survey

JEL Classification: D10

1. Introduction

The purpose of this study is to analyze the online purchasing behavior of young adults (ages 20-29), specifically focusing on the use of online supermarkets.

An online supermarket is defined as a "service that accepts orders via computer or mobile phone for products handled by supermarkets, such as fresh foods, processed foods, and daily necessities, and delivers them from the store" (Kawabe, 2011)[1]. In Japan, Seiyu is generally said to have been the first to start this service in 2000. The primary selling point of online supermarkets is same-day delivery, which distinguishes them significantly from

[1] Nagaoka University of Technology, Information and Management Systems Engineering, Japan, s233313@stn.nagaokaut.ac.jp
[2] Nagaoka University of Technology, Information and Management Systems Engineering, Japan, nsuzuki39@kjs.nagaokaut.ac.jp

the delivery businesses of co-ops or general online shopping sites like Rakuten and Yahoo!.

The market, which was initially small, expanded to an estimated 50 billion yen or more in 2009 (Kawabe, 2011) and reached 304 billion yen in 2023.[3] According to the 2024 Annual Statistical Survey Report on Supermarkets (National Supermarket Association, 2024)[2], a survey on the implementation rate of online supermarkets targeting 253 supermarket companies shows an increasing trend year by year: 16.9% in 2022, 20.7% in 2023, and 21.8% in 2024. Furthermore, the implementation rate of online supermarkets increases as the number of stores owned by the supermarket company increases, and companies in urban areas have higher implementation rates.

Called "Net Super" (Online Supermarket) in Japan, they are referred to as "Online Grocery" in the UK (JETRO, 2018) [3]. [4] Tesco in the UK first entered the market in 2000[5], and by the following year, sales had increased by 43% to 2.9 billion pounds, establishing its position as Europe's largest internet grocer. [6]The UK online grocery market size was estimated at approximately 11.3 billion pounds in 2017. Since major companies fully entered the market in 2012, the market has continued to grow rapidly, expanding to approximately twice the size it was in 2012 (JETRO, 2018). In the United States, 2023 sales in the eGrocery (online grocery sales) market were 95.8 billion dollars.[7]

Regarding the market size of online supermarkets mentioned above, Japan's market was 304 billion yen in 2023, whereas the UK's was approximately 11.3 billion pounds as of 2017, which is about 5.4 times that of Japan.[8] Comparing Japan and the United States in 2023, the US market is approximately 45 times larger.[9] Japan and the UK had similar entry timings for online supermarkets. Regarding the population of both countries in 2023, Japan has approximately 120 million people, while the UK has approximately 67 million, a nearly twofold difference (Statistics Bureau of Japan, 2024)[4]. Comparing the populations of Japan and the US in 2023, Japan has approximately 123.1 million people, while the US has 347.3 million, meaning the US has about three times the population of Japan. Thus, even when considering population, it can be inferred that Japan's online supermarket business is still developing compared to overseas markets.

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[3] Fuji Keizai Group, "Press Release No. 24041" https://www.fuji-keizai.co.jp/press/detail.html?cid=24041&la=ja&la=ja (Last accessed November 24, 2025).
[4] In countries other than the UK, such as the US (Walmart, etc.), terms like "online grocery" ,"e-grocery" and "online supermarkets" are also used.
[5] SAIQOS, "Is Japan Ahead? About Online Supermarkets in the UK and US" https://www.saiqos.co.jp/marketing/2015/on-line-commerce/ (Last accessed November 24, 2025).
[6] The Guardian, "Tesco unveils £1bn profits " https://www.theguardian.com/business/2001/apr/10/tesco. (Last accessed November 24, 2025).
[7] Emi Takeda (2024) "2023 U.S. eGrocery Sales Total $95.8 Billion, Slipping 1% versus Prior Year" https://www.mercatus.com/newsroom/2023-us-egrocery-sales-total-95-8-billion/ (Last accessed October 26, 2025).
[8] According to Exchange-Rates.org (https://www.exchange-rates.org/ja/), the average exchange rate for the Japanese Yen and the British Pound in 2017 was 1 GBP = 144.26 JPY; calculations were made using this rate.
[9] According to Exchange-Rates.org (https://www.exchange-rates.org/ja/), the average exchange rate for the Japanese Yen and the US Dollar in 2023 was 1 USD = 140.53 JPY; calculations were made using this rate.

According to the 2024 Supermarket White Paper (National Supermarket Association, 2024)[5], the percentage of consumers in Japan who use online supermarkets—combining "use often," "use sometimes," and "use very occasionally"—is approximately 36%. This figure is low compared to the 57% of households in the United States that purchased groceries online in March 2025.[10] Furthermore, focusing on the utilization rate among young adults (ages 20-29): in Japan, the usage rate is highest among women in their 30s at 45%, while for those in their 20s, it is approximately 28% for men and 41% for women (National Supermarket Association, 2024). In contrast, in the UK, the demographic with the most online supermarket users is the 25–44 age group, with 62% of men and 58% of women using the service; for the 16–24 age group, 61% of men and 41% of women use the service (JETRO, 2018).

Although the current Japanese online supermarket market is growing, the market size is small compared to overseas, and the utilization rate among young adults specifically is low. Regarding this, Nakamura (2019)[6] points out that consumers currently view online supermarkets merely as a "complement" to physical stores, so usage scenarios have not expanded. Nakamura suggests that it is necessary to increase the motivation to actively use online supermarkets and to strengthen the response to young adults as a means of expanding sales channels.

However, regarding the consumer behavior of Japanese young adults, some point out that online purchasing behavior increased due to the COVID-19 pandemic (Shigeta, Sakaue, Suzuki, 2024)[7] and that this behavior has continued even after the self-restraint period (Koyama, Sakaue & Suzuki, 2025)[8].

Thus, while online supermarkets are widely popularized overseas, the utilization rate in Japan is low, contrary to the implementation rates and intentions of companies. Furthermore, while many people in their 20s use these services overseas, the rate is low in Japan. Therefore, this study focused on Japanese consumers in their 20s and conducted a quantitative study using a questionnaire, setting the research question as: "What is the current purchasing behavior of young Japanese adults regarding online shopping, specifically online supermarkets?"

This paper will review previous studies in Chapter II, explain the research overview in Chapter III, and describe the results of the quantitative analysis in Chapter IV. Chapter V will provide a discussion, and finally, Chapter VI will present the conclusion.

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[10] Mercatus, "US eGrocery Sales Trends with Brick Meets Click March 2025 Insights" https://www.mercatus.com/resources/reports/us-egrocery-sales-trends-with-brick-meets-click-march-2025-insights/ (Last accessed October 26, 2025).

2. Review of Previous Studies

First, we examined previous studies of online purchasing, including online supermarkets. Jusoh and Ling (2012)[9] define online purchasing as "the process by which consumers purchase services or products over the internet." Nakano and Kondo (2019)[10], based on parameter estimation results of time-invariant independent variables, found that variables such as gender, bulk buying, time constraints, number of children, and a dummy variable for age 50–69 were significant. They found that in Japan, older women (aged 50–69) were the consumers likely to engage in online purchasing, and this trend reflected the influence of the primary household shoppers who routinely purchased daily consumer goods.

In research focusing on Japanese young adults, Shigeta et al. (2024) focused on Japanese people in their 20s and investigated how consumer behavior changed before and after the COVID-19 pandemic. The survey found that online purchasing frequency increased after the pandemic, while purchasing at physical stores tended to decrease. Koyama et al. (2025) investigated how the lives and consumer behavior of young adults changed after the relaxation of COVID-19 self-restraint. The results showed that from the self-restraint period to the post-relaxation period, online class hours decreased and the frequency of going out increased. However, there were no significant changes in the frequency of outings for shopping purposes or the time spent on online purchasing, indicating that consumer behavior did not change significantly. They cited reasons such as the self-restraint period serving as a trigger to learn about convenience, and university students becoming accustomed to the self-restraint lifestyle, which became routinized.

Regarding online purchasing overseas, Noor Afzaliza Nazira Ibrahim et al. (2023)[11] conducted a systematic review by scrutinizing 15 academic papers on the online shopping behavior of young adults.[11] The review indicated that online shopping is one of the most important trading strategies used globally and identified convenience[12] as one of the most significant influencing factors, accounting for the largest proportion of motivational factors for online shopping. Furthermore, factors influencing the decisions and behaviors of young adults in online shopping were investigated, showing that low prices have the greatest impact on their online shopping behavior.

Next, we examine previous studies focusing on online supermarkets. In research on overseas online supermarkets, Jung-Im Seo (2024)[12] investigated the online supermarket purchasing behavior of different generations in the US and their purchasing intentions during and after the COVID-19 pandemic. The study showed that Generation Y (aged 27–42) deeply understands the benefits and shopping capabilities of online supermarkets and is more likely to maintain usage than other generations. Furthermore, it pointed out that while Generation Z (aged 11–26) comprehensively understands the merits and shopping capabilities related to online supermarkets after the pandemic, they prefer to return to traditional retail stores for grocery purchases. The study considers that to acquire

[11] The reviewed papers covered consumers in the US, Asia (China, India, Vietnam, etc.), and Europe (Lithuania, Turkey, Bosnia and Herzegovina, etc.). Japanese consumers were not included.
[12] In the paper, convenience is defined as "reducing the burden of shopping and saving time."

the potential customer market of Generation Z in online supermarkets, it is essential for online grocery retailers to diversify services and strengthen marketing strategies, such as offering free delivery, discounts on shipping and handling fees, and flexible time slots.

Regarding Japanese online supermarkets, Moriuchi and Takahashi (2016)[13] surveyed repeat customers who had experience purchasing products at Japanese online supermarkets. The results showed that men accounted for 41.6% of the total, and the most common age groups were 30–39 years (18.6%), 40–49 years (39.9%), and 50–59 years (36.4%). Takahashi (2016) indicated that the average age of loyal users of the online supermarket format in Japan is 50.6 years old. Furthermore, through a comparison between online supermarket users in 2012 and format-loyal users from 2012–2016, Takahashi (2016)[14] raised issues existing in online supermarkets, such as the fact that factors influencing trust and shopping satisfaction were retail marketing factors, as well as the importance of creating shopping sites that users do not get tired of and staging enjoyment.

Regarding the use of online supermarkets by young adults, Nakamura (2019) conducted a questionnaire survey to understand how Japanese consumers use online supermarkets. Nakamura considered that consumers currently view online supermarkets merely as a "complement" to physical stores, meaning usage scenarios had not expanded, and it is necessary to increase the motivation to actively use them. Additionally, Nakamura pointed out three directions for efforts to increase consumer needs for food delivery: (1) highlighting the unique characteristics of products sold in online supermarkets, (2) enabling the receipt of the same services in online supermarkets as in physical stores, and (3) expanding the customer base (especially the younger generation, who had a synergistic relationship between the use of physical stores and online supermarkets).

As stated in Chapter I, the use of online supermarkets among young adults is high overseas but low in Japan and expanding usage among young adults has been pointed out as a challenge. While previous studies have analyzed online purchasing by young adults and the actual usage of online supermarkets by age group, there has been little focus on consumer behavior regarding online supermarket usage specifically among young adults. For the online supermarket industry, which continues to expand, acquiring young adults—who could become major future customers—can be said to be a strategic business challenge. Clarifying the actual usage by young adults has significance not only academically but also practically. Therefore, this study set the research question as "What is the current purchasing behavior of young Japanese adults regarding online shopping, specifically online supermarkets?" and conducted a quantitative study using a questionnaire.

3. Research Outline

First, the questionnaire survey of this study was based on the research of Nakamura (2019) and Koyama et al. (2025). Nakamura (2019) conducted a questionnaire survey targeting March 2018 to understand how consumers use online supermarkets. Koyama et al. (2025) conducted questionnaire and interview surveys with university students based on the research question of how their lives changed between the self-restraint period (March 2020 – March 2022) and the post-restraint period (April 2022 – November 2022) due to COVID-19.

The questionnaire content was prepared with a total of 18 questions, referencing Nakamura (2019) and Koyama et al. (2025). Questions 1 to 7 cover purchasing at physical stores and online shops, questions 8 to 13 cover the use of online supermarkets, and questions 14 to 18 are questions regarding the individual respondent (Table 1). For responses, representative answers were provided as choices, and a free-text field was provided for other answers.

This survey targeted the most recent one-month period from the time of the survey implementation (June 2024) as the target period for purchasing behavior and was conducted on 242 university students in their 20s. This target group consists of students from the same university as in Shigeta et al. (2024) and Koyama et al. (2025). The questionnaire was sent using Google Forms. The number of responses was 54 (response rate 22.3%), and excluding ambiguous responses and those with no answers, the number of valid responses was 41.

No.	Question Content	Response Format	Source
Q1	How many times a month do you shop at physical stores?	Free text	Koyama (2021)
Q2	What is your main mode of transportation when going shopping?	Multiple choice	Koyama (2021)
Q3	How many minutes does it take to drive to the place you use most often?	Free text	Koyama (2021)
Q4	How many times a month do you shop online?	Free text	Koyama (2021)
Q5	Which website do you use most for online shopping?	Multiple choice	Nakamura (2019)
Q6	What do you buy most often when shopping at physical stores?	Multiple choice	Nakamura (2019)
Q7	What do you buy most often when shopping online?	Multiple choice	Nakamura (2019)
Q8	Have you ever used an online supermarket?	Multiple choice	Nakamura (2019)
Q9	Which store's service do you use for online supermarket shopping?	Free text	Nakamura (2019)
Q10	How many times a month do you use online supermarkets?	Free text	Nakamura (2019)

Q11	What is the main reason you use online supermarkets?	Multiple choice	Nakamura (2019)
Q12	What is the main reason you do not use online supermarkets?	Multiple choice	Nakamura (2019)
Q13	Do you think you would like to use online supermarkets in the future?	Multiple choice	Koyama (2021)
Q14	Respondent's Age	Free text	
Q15	Respondent's Grade / School Year	Multiple choice	
Q16	Respondent's Gender	Multiple choice	
Q17	Does the respondent live alone?	Multiple choice	
Q18	Where does the respondent currently live?	Multiple choice	

Table 1: Questions for Quantitative Survey

4. Quantitative Research

This chapter explains the results of the data obtained from the questionnaire survey. First, survey results regarding purchasing in physical stores and online will be described, followed by survey results regarding purchasing in online supermarkets.[13]

4.1 Survey Results on Physical Stores and Online

Frequency of shopping at physical stores (times)	0	1–5	6–10	11–15	16–20	21 or more	Mean	Standard Deviation
Number of people (n)	0	8	18	2	12	1	12.46	9.66

Frequency of online shopping (times)	0	1–5	6–10	11–15	16–20	21 or more	Mean	Standard Deviation
Number of people (n)	6	35	0	0	0	0	1.56	1.26

Table 2: Purchasing Frequency in Physical Stores and Online for One Month (n=41)

Table 2 is a table showing the number of shopping trips in physical stores and online for one month. First, looking at the average number of shopping trips, physical stores were at 12.46 times compared to 1.56 times for online, showing a difference of approximately 8

[13] To make it easier for respondents to understand, the term "Net Shop" was used instead of "Online."

times. Also, while there were no respondents who used physical stores 0 times, there were 6 respondents who did not use online shopping at all. This suggests that for the subjects, physical stores are the primary means of purchasing, and there is diversity in how online shopping is used.

Next, focusing on the standard deviation, which indicates the degree of dispersion, the standard deviation for physical stores was 9.66, which is very large relative to the mean, indicating individual differences in the frequency of use. On the other hand, the standard deviation for online was small at 1.26, and the usage frequency for many people was concentrated around the mean.

Furthermore, looking at the distribution of the number of people, two peaks were seen for physical stores at "6–10 times" and "16–20 times." In contrast, for online, the distribution gradually decreased from the most common answer of "1 time," indicating that a pattern of purchasing behavior with supplementary use about once a month is most common.

Regarding the most used site for online purchasing, Amazon had the highest result at a rate of 30%, indicating a trend that many consumers use Amazon. Other sites included Yahoo! Auctions and Rakuten Ichiba.

Regarding the items most frequently purchased in physical stores and online, food, beverages, and alcohol accounted for 95% of physical stores purchases. On the other hand, computers and peripherals accounted for the largest proportion of online purchases at 17%. As for the items purchased, only three types were purchased in physical stores: food/beverages/alcohol, home & kitchen, and books/comics/magazines. However, online, a total of 11 types of products were purchased, including fashion and home appliances/cameras/AV equipment. This survey showed that young adults tend to purchase mainly food products in physical stores, while purchasing a wide variety of other items online.

4.2 Survey Results on Online Supermarkets

Regarding experience with online supermarkets, 6 out of 41 students (14.6%) answered that they had experience using them. The monthly usage frequency for the 6 users was either 0, 1, or 2 times. The services used were diverse, including Amazon (Online Supermarket), Aeon, Ito-Yokado, and community-based supermarkets, and no concentration on specific services was seen.

The 6 online supermarket users also shopped at physical stores. Since it is conceivable that online supermarket users utilize physical stores with similar frequency to non-users, a hypothesis was set that "there is no difference in the number of shopping trips at physical stores between online supermarket users and non-users," and a two-tailed t-test was performed. As a result, the difference in the average monthly shopping trips at physical stores between online supermarket users and non-users was 0.04 times, the t-value was

0.01, and the two-sided p-value was 0.99, supporting the hypothesis. In other words, it was suggested that online supermarket users shop at physical stores in the same way as non-users and use online supermarkets as needed.

Next, regarding reasons for using and not using online supermarkets, the main reasons for use cited by experienced users centered on voices evaluating the convenience provided by online supermarkets, such as "difficulty going out," "saving time," and "rich product assortment." On the other hand, the biggest reason cited by the non-user group for not using it was "because there is a physical store nearby (34%)," followed by "prices are high (26%)." Other reasons included "trouble of receiving" and "complexity of usage methods."

	Will use in the future	Probably will use in the future	Can't say / Undecided	Probably will not use in the future	Will not use in the future
Online supermarket users	3 (50.0%)	1 (16.7%)	1 (16.7%)	1 (16.7%)	0
Non-users of online supermarkets	0	6 (17.1%)	6 (17.1%)	7 (20.0%)	16 (45.7%)

Table 3: Future Intentions by Online Supermarket Usage Experience (n=41)

Regarding future intentions categorized by online supermarket usage experience, as shown in Table 3, the results were polarized depending on the presence or absence of usage experience. Specifically, responses from the user group skewed heavily toward positive opinions, with "Will use in the future" accounting for half (50.0%) and reaching approximately 67% when combined with "Will somewhat use in the future." In contrast, in the non-user group, responses were concentrated on negative opinions, with "Will not use in the future" accounting for nearly half (45.7%) and approximately 66% showing a negative view when including "Will somewhat not use in the future."

5. Discussion

First, the results of this survey suggested that the purchasing behavior of young Japanese adults remains centered on physical stores, with online usage, including online supermarkets, remaining limited and playing a complementary role. Second, although the use of online supermarkets by young Japanese adults is not very common, it was suggested that the presence or absence of usage experience is a factor that polarizes future usage intentions. This chapter discusses what these results mean.

First is the diversity of purchasing behavior among young Japanese adults. The fact that the standard deviation for the frequency of physical store use was large (SD=9.66) is thought to reflect that the lifestyles of young adults are not uniform. The two purchasing styles shown in the results—"those who buy in bulk 1–2 times a week" and "those who buy frequently in small amounts"—are thought to be due to diversity in behavior arising from differences in life rhythms and values.

Second, the results of this survey suggested that for young Japanese adults, online supermarkets, like general online purchasing, are positioned as a complementary means to physical stores. Comparing the difference in the average number of shopping trips at physical stores between online supermarket users and non-users showed that the use of online supermarkets does not affect the frequency of physical store use. This result is consistent with Nakamura's (2019) point that users do not substitute physical stores with Japanese online supermarkets but continue to purchase at physical stores while using online supermarkets as needed. Furthermore, when compared with the finding by Nakano and Kondo (2019) that older women drive online purchasing of daily consumer goods in Japan, it is possible that a generational usage gap exists where young adults use online purchasing (including online supermarkets) as a complement, while older generations utilize it more actively.

Third, this survey clarified the nature of the barriers to the diffusion of online supermarkets in Japan through comparison with young adults overseas. In their review of online purchasing motivations among young adults overseas, Noor Afzaliza Nazira Ibrahim et al. (2023) analyzed that "convenience" and "low prices" are the two major factors promoting use. In contrast, the biggest reasons cited by non-users of online supermarkets in this survey were "having a physical store nearby," followed by "high prices." It is possible that young Japanese adults do not feel burdened by shopping at physical stores and are not satisfied with additional costs such as delivery fees or product prices of online supermarkets. This situation differs from overseas markets, and a more detailed analysis of delivery areas and fees for Japanese online supermarkets is necessary. Furthermore, the result of this survey that the presence or absence of usage experience polarizes future intentions may be grasped as a generation-specific challenge that transcends national borders, when considering the study by Jung-Im Seo (2024) analyzing Generation Z in the US.

The above content provides important suggestions for Japanese online supermarket operators targeting young adults. The first is the acquisition of non-users. Since the biggest reasons non-users in this survey cited for not using online supermarkets were "having a physical store nearby" and "high prices," simply appealing to convenience is considered insufficient. It is thought necessary to present values such as online-only discounts, price advantages through subscription models, and "saving shopping time" in busy student lives, thereby overturning the perception of the physical and economic superiority of physical stores.

The second is the response to the polarization of evaluation due to usage experience. Since the presence or absence of online supermarket usage experience among the survey subjects determined future intentions in opposite directions, it is conceivable that for young Japanese adults, while value is easily realized once used, strong psychological barriers exist before use. Providing trials that appeal with first-time limited discounts or simple operability to fill this gap and lower the hurdle to use is considered effective in acquiring the non-user demographic of online supermarkets.

However, since this study was limited to Japanese university students as subjects, and the sample size was limited to 41, there is a limit to generalization. In the future, we desire to further elucidate what has been suggested here by conducting additional surveys. Also, since this study is an analysis limited to the consumer's perspective, challenges remain in making practical proposals. Considering that strategic approaches may not be realistic without taking into account the operational realities of the operator side, such as logistics costs, profitability, and securing personnel for online supermarkets, we believe it is necessary to conduct interview surveys or case studies with operators.

6. Conclusion

In countries such as the United States and the UK, the market size of online supermarkets is larger than in Japan, and online supermarkets are actively used regardless of age, including by young adults. On the other hand, in Japan, contrary to the implementation rates and intentions of supermarket companies, the market size of online supermarkets and the percentage of consumers using them are small, with the utilization rate among young adults (ages 20-29) being particularly low. Therefore, this study set the research question as "What is the current purchasing behavior of young Japanese adults regarding online shopping, specifically online supermarkets?" and analyzed the actual situation through a questionnaire survey targeting Japanese university students (ages 20-29) to elucidate this question.

The analysis results of this study showed that the targeted young Japanese adults clearly differentiate their usage, mainly purchasing essential food items at physical stores while purchasing diverse items with high hobby or specialized interest online. Regarding online supermarkets, which were the focus of the study, the utilization rate among young Japanese adults is low, and the results indicate that their use of online services continues to serve a role that is complementary to physical stores. This result was consistent with the findings of Nakamura (2019).

The discussion of this study suggested that two major challenges may exist as reasons why the use of online supermarkets by young Japanese adults has not progressed compared to overseas. The first point is that while "convenience" and "low prices" are the two major factors promoting the use of online purchasing (including online supermarkets) among young adults overseas (Noor Afzaliza Nazira Ibrahim et al., 2023), for young Japanese adults, the physical convenience of "having a physical store nearby" and the perception that "prices are high" act as barriers to using online supermarkets. The second point is that future usage intentions are polarized depending on the presence or absence of online supermarket usage experience. Regarding online supermarkets, it is conceivable that for young Japanese adults, value is easily realized once used, but strong psychological barriers exist before use. This suggests the existence of psychological barriers before use, which is consistent with the trend of American Generation Z (Jung-Im Seo, 2024).

In this study, two strategic approaches were presented to address these challenges. One is "acquisition of non-users" through online-only discounts and subscription models to overturn the barriers of "price" and "convenience." The other is to provide trials with first-time limited discounts and simple operability to eliminate the psychological barriers of appealing to online supermarket non-users and lower the hurdle to use.

As a limitation of this study, since it targeted students of a specific Japanese university and the sample size was limited, there is a limit to generalization. However, we believe that this study has academic and practical significance in quantitatively showing a part of the actual usage and psychological characteristics of the target group of young Japanese adults, presenting future strategic challenges. In the future, we intend to advance research from both the consumer and corporate sides by conducting additional questionnaire surveys for young adults, as well as conducting surveys with online supermarket operators.

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References

[1] Kawabe, N. - *The Formation and Development of Online Supermarkets: The Integration of Virtual and Real Businesses* - The Waseda Commercial Review, volume 429. ISSN 0387-3404. [page 23-78]. September 2011 (in Japanese)

[2] https://www.super.or.jp/?page_id=4223 - 2023 Supermarket Annual Statistical Survey Report. 10-12.2025 (in Japanese)

[3] https://www.jetro.go.jp/ext_images/_Reports/02/2018/af3d253a6ebee696/br_super.pdf - Survey on the Online Supermarket Market in the UK. 10-12.2025 (in Japanese)

[4] https://www.stat.go.jp/data/sekai/pdf/2024al.pdf - World Statistics. 10-12.2025 (in Japanese)

[5] https://www.super.or.jp/?page_id=6709 - 2024 Supermarket White Paper. 10-12.2025 (in Japanese)

[6] Nakamura, M. - *A Study on Consumer Usage Behavior and Future Business Operations of Online Supermarkets* - Chukyo Business Review, volume 41. ISSN 1348-8848. [page 33-61]. December 2019 (in Japanese)

[7] Shigeta, T., Sakaue, T., & Suzuki, N. - *Changes in Consumer Behavior of University Students during COVID-19 Self-Restraint Period* - Journal of Information Systems & Operations Management, volume 18 no. 2. ISSN 1843-4711. [page 185-198]. December 2024

[8] Koyama, S., Sakaue, T., & Suzuki, N. - *Changes in Behavior of University Students after COVID-19 Self-Restraint Period* - Journal of Information Systems & Operations Management, volume 19 no. 1. ISSN 1843-4711. [page 162-177]. May 2024

[9] Jusoh, Z., & Ling, G. - *Factors Influencing Consumers' Attitude Towards E-Commerce Purchases Through Online Shopping* - International Journal of Humanities and Social Science, volume 2 no. 4. ISSN 2220-8488. [page 223-230]. February 2012

[10] Nakano, S., & Kondo, H. - *Temporal Changes in Consumers' Online Purchasing and Their Factors: Perspectives on Purchasing Characteristics and E-Commerce Usage Devices* - The Japanese Journal of Behaviormetrics, volume 46 no. 1. ISSN 03855481. [page 19-31]. 2019 (in Japanese)

[11] Ibrahim, N. A. N., Husseini, F., Aisyah, N., Camelia, N., Khazlyn, N., & Faiz, W. - *Online Shopping Behaviour in Youth: A Systematic Review of The Factors Influencing OnlineShopping in Young Adults* - International Jounal of Academic Research in Business & Social Sciences, volume 13, no. 2. ISSN 2222-6990. [page 157-166]. February 2023

[12] Jung-Im, S. - *An Empirical Investigation of Online Grocery Shopping Behaviors Based on Different Generations* - International Journal of Business and Management, volume 19, no. 1. ISSN 1833-3850. [page 185-196]. January 2024

[13] Moriuchi, E., & Takahashi, I. - *Satisfaction Trust and Loyalty of Repeat Online Consumer within the Japanese Online Supermarket Trade* - Australasian Marketing Journal, volume 24, no. 2. ISSN 1441-3582. [page 146-156]. May 2016

[14] Takahashi, I. - *Online Supermarkets as Innovators* - Marketing Journal, volume 36 no.2. ISSN 0389-7265. [page 5-20]. September 2016 (in Japanese)

Bibliography

Herbert, A, S. - *The Sciences of the Artificial (3rd edition)* - ISBN 9780585360102. Published by MIT Press. 1996

Ibrahim, N. A. N., Husseini, F., Aisyah, N., Camelia, N., Khazlyn, N., & Faiz, W. - *Online Shopping Behaviour in Youth: A Systematic Review of The Factors Influencing OnlineShopping in Young Adults* - International Jounal of Academic Research in Business & Social Sciences, volume 13, no. 2. ISSN 2222-6990. [page 157-166]. February 2023

Jung-Im, S. - *An Empirical Investigation of Online Grocery Shopping Behaviors Based on Different Generations* - International Journal of Business and Management, volume 19, no. 1. ISSN 1833-3850. [page 185-196]. January 2024

Jusoh, Z., & Ling, G. - *Factors Influencing Consumers' Attitude Towards E-Commerce Purchases Through Online Shopping* - International Journal of Humanities and Social Science, volume 2 no. 4. ISSN 2220-8488. [page 223-230]. February 2012

Kawabe, N. - *The Formation and Development of Online Supermarkets: The Integration of Virtual and Real Businesses* - The Waseda Commercial Review, volume 429. ISSN 0387-3404. [page 23-78]. September 2011 (in Japanese)

Koyama, S., Sakaue, T., & Suzuki, N. - *Changes in Behavior of University Students after COVID-19 Self-Restraint Period* - Journal of Information Systems & Operations Management, volume 19 no. 1. ISSN 1843-4711. [page 162-177]. May 2024

Moriuchi, E., & Takahashi, I. - *Satisfaction Trust and Loyalty of Repeat Online Consumer within the Japanese Online Supermarket Trade* - Australasian Marketing Journal, volume 24, no. 2. ISSN 1441-3582. [page 146-156]. May 2016

Nakamura, M. - *A Study on Consumer Usage Behavior and Future Business Operations of Online Supermarkets* - Chukyo Business Review, volume 41. ISSN 1348-8848. [page 33-61]. December 2019 (in Japanese)

Nakano, S., & Kondo, H. - *Temporal Changes in Consumers' Online Purchasing and Their Factors: Perspectives on Purchasing Characteristics and E-Commerce Usage Devices* - The Japanese Journal of Behaviormetrics, volume 46 no. 1. ISSN 03855481. [page 19-31]. 2019 (in Japanese)

Nonaka, I., & Takeuchi, H. - *The Knowledge-creating Company* - ISBN 9780195092691. Published by Oxford University Press, Inc. 1995

Satou, I. - *The Art & Science of Social Research, vol. 1* – ISBN 9784130520263. Published by The University of Tokyo Press. 2015 (in Japanese).

Satou, I. - *The Art & Science of Social Research, vol. 2* - ISBN 9784130520270 . Published by The University of Tokyo Press. 2015 (in Japanese).

Shigeta, T., Sakaue, T., & Suzuki, N. - *Changes in Consumer Behavior of University Students during COVID-19 Self-Restraint Period* - Journal of Information Systems & Operations Management, volume 18 no. 2. ISSN 1843-4711. [page 185-198]. December 2024

Sukegawa, M., Hatsushio, K., & Suzuki, N. - *Reconsideration of Long-term Internships and Future Proposals* - Journal of Information Systems & Operations Management, volume 18 no. 1. ISSN 1843-4711. [page 261-275]. May 2024

Takahashi, I. - *Online Supermarkets as Innovators* - Marketing Journal, volume 36 no.2. ISSN 0389-7265. [page 5-20]. September 2016 (in Japanese)

Tamura, M. - *Foundations of Causal Process Tracing* – ISBN 9784561267836. Published by Hakuto-Shobo. 2023 (in Japanese).

Thomas, S. K. - *The Structure of Scientific Revolutions 50th Anniversary Edition (4th Edition)*. ISBN 9780226458120. Published by The University of Chicago Press. 2012

https://www.jetro.go.jp/ext_images/_Reports/02/2018/af3d253a6ebee696/br_super.pdf - Survey on the Online Supermarket Market in the UK. 10-12.2025 (in Japanese)

https://www.stat.go.jp/data/sekai/pdf/2024al.pdf - World Statistics. 10-12.2025 (in Japanese)

https://www.super.or.jp/?page_id=4223 - 2023 Supermarket Annual Statistical Survey Report. 10-12.2025 (in Japanese)

https://www.super.or.jp/?page_id=6709 - 2024 Supermarket White Paper. 10-12.2025 (in Japanese)